

The 2022 study

In 2022, NMSSA explored students' critical thinking strategies in a range of contexts, including analysis of advertising texts presented on media platforms. About 1800 students participated in two of these tasks reported here.

Further information about student achievement and the factors that impact achievement can be found in the 2022 health and PE Findings reports, and on the NMSSA health and PE data window.
See <https://nmssa.otago.ac.nz/>



Hidden Messages – Critical thinking in media contexts

Information from the 2022 National Monitoring Study of Student Achievement (NMSSA)

Illuminating – why focus on critical thinking?

Critical thinking in the health and physical education (PE) learning area

Health and Physical Education in the New Zealand Curriculum (1999)¹ defines **critical thinking** as 'examining, questioning, evaluating, and challenging issues and practices' and **critical action** as 'action based on critical thinking' (p.56).

The central importance of being able to think critically when learning in health and PE in New Zealand cannot be underestimated, or understated².

Health messages on media platforms

The purpose of marketing is to promote and sell products, generally by associating them with idealised and aspirational values which convey the impression that success and happiness can be secured by purchasing a product³. For New Zealand students, developing the skills to challenge this assumption is important. In a 2022 study from University of Otago researcher Dr Louise Signal⁴ reported that NZ children are exposed to around 550 market brands each day.

Informing – what we did and what we found out.

Links to The New Zealand Curriculum

The tasks 'Pump-power' and 'Keeping track' are positioned within Strand D Healthy Communities and Environments and Strand A Personal Health and Physical Development of the health and physical education learning area in the NZC (2007).

Specifically:

- describe media influences that contribute to the wellbeing of people in New Zealand
- describe how social messages and stereotypes including those in the media can affect feelings of self-worth.



Media literacy tasks in the NMSSA study

In the 2022 study of HPE, NMSSA designed several tasks that required students to examine the construction and impact of both digital and static images. Items from two of the tasks 'Pump-power' and 'Keeping track' are described on this information sheet.

In responding to these tasks, students needed to think critically about:

- the way media presents ideas both literally and subliminally about people and ways of being and doing
- how these persuasive messages are constructed and what they imply
- how verbal, visual and audiovisual elements support inferences that the advertisers want customers to make
- how their messages impact on the wellbeing of people.

Student responses were marked and received a score of 0, 1 or 2, depending on the depth of knowledge or understanding they demonstrated.

Approximately 900 students at Year 4 and 900 students at Year 8 participated in these tasks.

Links to the English learning area of Te Mātaiaho

Texts are shaped for particular purposes and with particular audiences in mind. Understanding the purposes and audiences enables us to consider our own use of texts and the impacts (positive and negative) that they can have. All texts carry ideas and help us form our ideas about the world. As we learn about how language works (the codes and conventions used to make meaning) we come to appreciate how it affects how we see the world, ourselves and each other.

- By the end of Year 3 students should know that texts are designed for specific purposes – for example to entertain, inform and persuade.
- By the end of Year 6 students should know that sometimes ideas in texts are not directly stated and texts rely on shared understandings to get their messages across.
- By the end of Year 8 students should know that texts can have multiple layers of ideas – exploring them helps to expose deeper meanings.

Advertisements

Task 1: Pump-power

Students viewed a 30 second for *Pump-power* (an energy drink), then were asked

As you watch, think about what this ad wants you to believe about Pump-power.

The ad will play two times.

What does this advertisement want you to believe about Pump-power?

Scores	0	1	2
	Limited response	General reasoning: literal comprehension e.g. <i>It will give you an energy boost.</i>	Deeper reasoning: Understands the implication that the product is transformative e.g. <i>(If you want to be a winner drink it) and supports aspirations (You can be a sports star just like...).</i>
Year 4	19%	73%	8%
Year 8	11%	72%	17%

Figure 1. Percentages of students' responses by year level, to the question 'What does this advertisement want you to believe...?'

Task 2: Keeping track

In the first part of this task, students were asked to consider possible positive and negative impacts on students if schools were to distribute fitness trackers to all of their students.

In the second part of this task students were told:

Now you will watch a video of an ad for a digital fitness tracker.

As you watch, think about what this ad wants you to believe about fitness trackers.

What does this advertisement want you to believe about having a digital fitness tracker?

Scores	0	1	2
	Limited response	General reasoning - literal comprehension Direct messages – <i>it's cool; it's portable; you will learn more about your health.</i>	Deeper thinking – inferential. Hidden message identified – the product is transformative (e.g. <i>Having one will make you fit and have a better life</i>)
Year 4	42%	49%	9%
Year 8	15%	60%	25%

Figure 2. Percentages of students' responses by year level, to the question 'What does this advertisement want you to believe...?'

Summary of Findings

On both of the 'Pump-power' and 'Keeping Track' items, between 50 and 75 percent of students were able to identify a relevant message for the video texts. There was not a notable difference between the numbers of Year 4 and Year 8 students who scored in this band (Score of 1) especially in relation to the 'Pump-power' task.

Fewer students overall, were able to see beyond the literal messages to recognise the not so subtle aspirational promises – that by consuming a product you become a winner or by having a fitness tracker you will get fit, and will have a better lifestyle.

Year 8 students were more inclined to demonstrate deeper thinking than Year 4 students, but the difference was not as large as one might expect given the age difference.

The response pattern across both tasks was similar.

¹Ministry of Education. (1999). *Health and Physical Education in the New Zealand Curriculum*. Ministry of Education: Wellington.

²Roberston, J. *Underlying concepts in health and physical education*. NZHEA

³Smart, B. (2010). *Consumer society: critical issues and environmental consequences*. SAGE: London.

⁴Signal, L., et al. An objective assessment of children's exposure to brand marketing in New Zealand (Kids'Cam): a cross-sectional study. In *The Lancet* (Vol 6). 2. Feb 2022.

Pump-power - Examples of student responses

Score of 2

- That it is a healthy, convenient drink suitable for athletes and active people. They want it to seem hip and cool. It's aimed at impressionable teens who want to play basketball want to be fit, and want to be cool. Yr 8
- That Pump-power will help you be like (name of sportsperson). That it's the best drink, especially on the go. If you drink it nothing will stop you. Yr 8
- That it gives you a muscley build and makes you fast so you can win the sports that you are playing Yr 8
- That if you drink it before a game your team will win. Yr 4
- It will make you better at sport and will be good for you. Yr 4
- That it makes you more skilled doing physical activities. Yr 8
- That it gives you speed and power. It's a good thing for exercise. Yr 4

Score of 1

- The advert wants you to believe that it's good if you need energy fast Yr 8
- It hydrates you well and quickly. It has the 'power' to allow the liquid to flow nicely /quickly into your mouth. Yr 8
- It will give you power and superior hydration. Yr 8
- You get hydrated and it is really fast to come out so you get a lot of it. Yr 8

Keeping track - Examples of student responses

Score of 2

- That being fit is good. Yr 8
- They want you to think it's beneficial to you and those around you. Yr 4
- They want you to think you'll be more active so that you'll be healthier. Yr 8
- They want you to believe it's for all ages and can be used for any type of sport so they can capture multiple audiences Yr 8
- That a fitness tracker will help you with everyday tasks. You can use it for many different sports and activities Yr 8
- That it can improve your physical and sporty life Yr 8
- That it can make you better at stuff Yr 4

Score of 1

- They want you to get motivated to exercise Yr 8
- That they can be used for every activity and that there is one suitable for everyone. Yr 8
- Fitness trackers can see what your body is doing and convince you to do it more. Yr 4
- You will know how much you run. Yr 4
- You can use it for anything fitness wise Yr 4

Notes on the scores

Each score represents a response category – students' progress in health education is observed in their developing conceptual understanding. It isn't always tidy, so within each scoring category there will be an interior progression from responses that just meet the description, to fuller more detailed responses.

The responses here are tentatively listed in order of sophistication.

Opportunities to learn

The opportunity to 'talk about the meaning of hidden health messages (like on TV or Tik Tok)' was the least frequently reported opportunity to learn offered by Year 4 teachers, and this was similarly reported by Year 8 teachers.

Students reported fewer opportunities to talk about hidden messages than they reported opportunities for other health focused learning experiences.

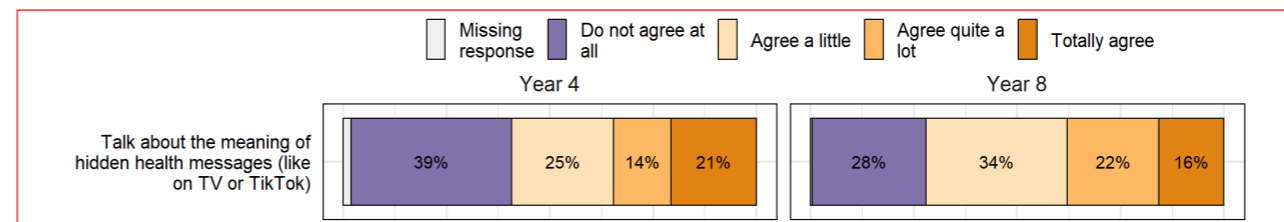


Figure 3. Percentages of teachers' responses by year level, to the statement 'I provide opportunities for students to talk about hidden messages.'

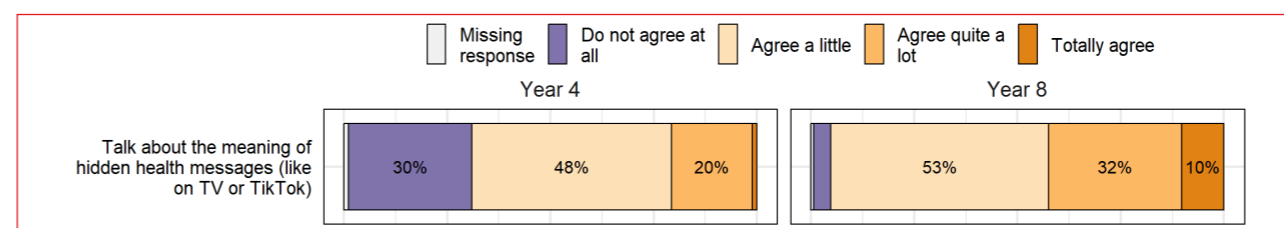


Figure 4. Percentages of students' responses by year level, to the statement 'I talk about hidden messages at school.'

Thinking critically about what's not there

A bottle of Pump-power contains about 11 teaspoons of sugar.

Do you think the advertisement should tell us this?

- 40% of Year 4 students and 15% of Year 8 students gave responses like – *it's too sweet.*
- **57% of Year 4 students and 49% of Year 8 students were able to provide a general reason - like Yes - so people don't drink too much of it. No - people should just read the label.**
- 28% of Year 8 students and 11% of Year 4 students considered the social responsibility of the company (including the dilemma between honest advertising and needing to make sales).

Identifying audience

The 'Pump-power' task asked students to identify the target audience.

65% of the Year 4 students and 87% of the Year 8 students were able to name groups of people who would likely be targeted by the marketers.



Thinking critically about visual language features and techniques

In a different digital media task, students were asked to identify what had been done to make people take notice of the health message it contained. (This time the content was a Ministry of Health advertisement on the importance of hygiene during the pandemic).

- **69% of Year 4 students and 35% of Year 8 students could not identify any specific features.**
- 28% of Year 4 students and 42% of Year 8 students could identify one or two deliberate visual language features or techniques used to create an effect and meet a purpose.
- A quarter of the Year 8 students could identify three or more visual language features from this text.

Yr 8 students were also asked to evaluate whether the advertisement succeeded in conveying the message.

- **50% of Year 8 students provided a simple justification for their opinion.**
- 18% of Year 8 students provided deeper reasons for their response.

Improving – what does this mean for teaching and learning?

Overall many students showed that they could identify simple literal messages from these advertisements, but they did not look past the immediate context of the ads to consider the messages conveyed more implicitly, that is, the way they influence how we think about ourselves and what we think we need to enhance our lives – the hidden messages that shape social constructs of what is desirable.

When analysing the design aspects of an advertisement, around a quarter of Year 8 students were able to identify three or more visual language features used by advertisers to promote their message, but a third could not identify any features used. A quarter of the Year 4 students could identify one or two features used. When asked to evaluate the effectiveness of an advertisement, a third of the Year 8 students could not provide a scorable response, and a half provided a simple justification to support their opinion. (Year 4 students were not asked this).

If students are to become critical thinkers, they need opportunities to interrogate the texts they are exposed to. Analysis of the language and visual features used; consideration of audience and purpose; exploration of the multiple layers of ideas; and evaluation of the impacts of both explicit and implicit ideas on self, others and society, are all aspects of critical thinking and are applicable to health contexts. A socio-ecological perspective encourages self-reflection and critical thinking, and can lead to positive action.

In the classroom:

Use questions to support students to engage in critical analysis of any text, including media.

Who created this text?
Who is the text targeting?
What is the purpose of the message?
Whose point of view is this?

How might different people interpret the message?
How did they attract attention to the message – what devices did they use?

Use questions to support students to examine, critique and challenge health information.

In whose interest is this?
What is a question I now have?
What do I need to know more about?
Who could help me find a solution?

What are the assumptions?
What am I missing?
Why is this important? (Or not?)
What action can we take?

Note:

Sometimes the same task can be used at Year 4 and Year 8 to capture the development of conceptual understanding. These kinds of tasks are marked using a 'partial credit' scoring system that allows developing (partial) levels of understanding to be recognised. Responses are scored on 3 and sometimes 4-point scales, depending on the scope of the question.

Resources and references to support teaching of critical literacy (media literacy)

Bull, G. & Antsey, M. (2018). *Elaborating multiliteracies through multimodal texts: Changing classroom practice and developing teacher pedagogies*. Routledge.

Cope, B. & Kalantzis, M. (2015). The Things You Do to Know: An Introduction to the Pedagogy of Multiliteracies. In: Cope, B., Kalantzis, M. (eds) *A Pedagogy of Multiliteracies: Learning by Design*. Palgrave Macmillan, London. https://doi.org/10.1057/9781137539724_1

Fitzpatrick, K., Wells, K., Tasker, G., Webber, M., & Riedel, R. (2018) *Mental health education and hauora: Teaching interpersonal skills, resilience, and wellbeing. Years 7-10*. NZCER: Wellington.

NMSSA Critical Thinking Refer to the Critical Thinking in health and PE framework – in *NMSSA Key Findings Health and Physical Education 2017* or Insights for Teachers HPE (2017) available at: <https://nmssa.otago.ac.nz/reports-and-resources/>

Relationships and Sexuality Education: A guide for teachers, leaders and boards of trustees (Years 1-8). (2020). Ministry of Education: Wellington.

Sandretto, S., & Tilson, J. (2013). Reconceptualising literacy: *Critical multiliteracies for 'new times'*. TLRI. http://www.tlri.org.nz/sites/default/files/projects/Sandretto_Summary_final_1.pdf

Tilson, J. & Sandretto, S. (2016). *Integrating critical multiliteracies using the Four Resources Model: A New Zealand Guide*. NZCER Press